

**NATIONAL WEATHER SERVICE INSTRUCTION 10-320**

**NOVEMBER 10, 2014**

**Operations and Services**

**Marine And Coastal Weather Services, NWSPD 10-3**

**SURF ZONE FORECAST AND COASTAL/LAKESHORE HAZARD SERVICES**

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**NOTICE:** This publication is available at: <http://www.nws.noaa.gov/directives/>.

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**OPR:** OS21 (W. Presnell)

**Certified by:** OS21 (M. Tew)

**Type of Issuance:** Routine

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**SUMMARY OF REVISIONS:** This instruction supersedes NWSI 10-320, Coastal/Lakeshore Hazard Services, dated September 11, 2012. This instruction includes the following changes:

1. Changed OPR from J. Kuhn to W. Presnell.
2. Changed name of Instruction.
3. Included Surf Zone Forecast policies from NWSI 10-310, Coastal and Marine Forecast Services.
4. Amended definitions of low, moderate and high risk of rip currents to remove any mention of swimming ability and to add the description “life threatening” to rip currents.
5. Updated policies on issuing rip current information in informational statements. If rip currents are the primary hazard, a Rip Current Statement will be issued to address rip currents only. If rip currents are not the primary hazard, rip current information may be included in a High Surf Advisory/Warning or a Beach Hazards Statement. A Rip Current Statement may be issued in conjunction with a Coastal Hazard Message advisory/warning (High Surf for example) as a single segmented product using VTECs for each hazard.
6. Updated guidance on how to address high surf conditions and rip currents when they occur simultaneously.
7. Updated tables to include the Beach Hazards Statement VTEC, BH.S.
8. Added information for Rip Current and Beach Hazards Statements.
9. Added examples of Surf Zone Forecasts, Rip Current Statements, Beach Hazards Statements and single products with multiple VTECs. Updated examples for Coastal Flood Advisory and Warning and High Surf Advisory and Warning.

Signed

October 27, 2014

Andrew D. Stern

Date

Acting Director, Office of Climate,  
Water, and Weather Services

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## Appendix

### A. Examples of NWS Surf Zone Forecasts and Coastal/Lakeshore Hazard Products.....A-1

**1 Introduction.** This procedural directive describes routine and non-routine products issued by National Weather Service (NWS) Weather Forecast Offices (WFOs) and Weather Service Offices (WSOs) which are associated with the coastal/lakeshore (beach) and surf zone areas. The surf zone is the narrow area of water between high tide level on the beach and seaward side of the breaking waves. NWS beach and surf zone products are contained within the Surf Zone Forecast (no Valid Time and Event Code (VTEC)) and the Coastal / Lakeshore Hazard Message (VTEC). This Instruction provides requirements and guidelines associated with these products, and detailed content and format. Great Lakes offices will issue a Lakeshore Hazard Message with coastal offices issuing a Coastal Hazard Message.

## **2 Surf Zone Forecast (Advanced Weather Interactive Processing System (AWIPS) product category SRF)**

**2.1 Mission Connection.** The Surf Zone Forecast (SRF) provides valuable and life-saving information pertaining to hazards in the surf zone to the beachfront community, including the general public, and providers of beachfront safety services, such as lifeguards.

## 2.2 Issuance Guidelines

**2.2.1 Creation Software.** WFOs may produce the SRF using the AWIPS text editor or any other text editor.

**2.2.2 Issuance Criteria.** The SRF should be issued for beach areas as defined by the local WFO in concert with Regional Headquarters. Regional and local WFO policy will govern the specific issuance criteria of the SRF. The main audience for the SRF is the public and local public safety officials. See section 2.3.3 for the content of the SRF.

**2.2.3 Issuance Time.** Regional policy will govern the issuance of the SRF. Based on user and partner needs and/or requirements, the SRF should be issued at least once per day on a seasonal basis (e.g., Memorial Day weekend through Labor Day); however, the SRF can be issued year round. The season should be determined by the WFO in coordination with neighboring offices and Regional Headquarters.

**2.2.4 Valid Time.** Surf Zone Forecasts are valid from the time of issuance until the expiration time.

**2.2.5 Universal Geographic Code (UGC).** SRFs will contain land-based zone UGC codes.

**2.2.6 Product Expiration Time.** The SRF product expiration time is not more than 24 hours from the initial issuance.

**2.3 Technical Description.** SRFs will follow the format and content described in this section.

**2.3.1 Mass News Disseminator (MND) Broadcast Line.** None.

**2.3.2 MND Header.** The SRF MND Header is “SURF ZONE FORECAST.”

**2.3.3 Content.** SRF content should be developed in coordination with local safety agencies which have responsibility for beachfront safety. NWS Regions and WFOs / WSOs will determine the parameters to be included in the SRF. At a minimum, the SRF should contain any headlines for hazardous conditions and forecast information on the wave heights within the surf zone. WFOs / WSOs are encouraged to include additional information on weather conditions, beach/surf zone hazards, and other important beach / surf zone information that fit their local partner and user needs, e.g., rip currents, UV index, surf temperature and tides. Near the end of the season, the SRF should include a message indicating when it will end (current season) and when it will begin next season.

**2.4 Format.** The SRF is a segmented, free-form, text product and will comply with the requirements of NWSI 10-1701, *Text Product Formats and Codes*. A suggested product format follows. See Appendix A, pages A-2 and A-3 for examples.

This product is available in industry standard encoding and languages, such as American Standard Code for Information Interchange (ASCII), Extensible Markup Language (EML), Wireless Markup Language (WML), and Hypertext Markup Language (HTML).

<u>Product Format</u>	<u>Description of Entry</u>
FPaaii cccc ddhhmm SRFxxx <b>AWIPS ID</b>	<b>WMO Heading</b>
SURF ZONE FORECAST NATIONAL WEATHER SERVICE CITY STATE time am/pm lt day mon dd yyyy	<b>NWS Product Name</b> <b>Issuing Office</b> <b>Issuance Time/Date</b>
.FOR THE BEACHES of state...for day...	<b>Optional Statement</b>
stZXXX-XXX>XXX-ddhhmm- county-county-county-county- INCLUDING THE BEACHES OF city...city...city time am lt day mon dd yyyy	<b>UGC Type(Zone)&amp; Expiration Time</b> <b>County Names</b> <b>City Names</b> <b>Issuance Time/Date</b>
Significant Headlines or Long Duration Watches/Warnings Advisories...	
Beach/Surf Zone Hazards (such as)...	
Rip Currents and other dangerous currents...	
Unusual Waves...	
Lightning...	
Waterspout...	
Wave Height...	
Optional parameters as determined by a WFO or Region (such as)...	
Weather Forecast...Air Temperature...Sky Cover/Rain Chances...Wind Speed and Direction...	
Surf Temperature...	
Approximate Times for Tides...	
UV Index...	
\$\$	<b><i>This code ends zone segment</i></b>
FORECASTER ID	<b><i>Optional</i></b>
All times are local.	

**Figure 1. Surf Zone Forecast (SRF) Format**

## **2.5 Relationships Between the SRF and Other WFO products**

**2.5.1 Advisories or Warnings.** Forecasters will not use SRFs to issue Advisories or Warnings.

**2.5.1.1 Coastal Hazard Message (CFW).** Current or expected issuance of Coastal Hazard Messages should be referenced within the SRF. For example, High Surf Advisories should be issued using the CFW but current or expected High Surf Advisories may be referenced within the SRF, as this would be of interest to the beachfront community. See section 3 for additional information regarding Coastal Hazard Messages and the relationship between the SRF and CFW.

When WFOs issue Coastal Flood Warnings, the next scheduled SRF may contain only the Coastal Flood Warning headline and refer users to the CFW product, with a statement such as:

“Coastal Flood Warnings are currently in effect. The SRF will resume in its normal format after the Coastal Flood Warnings are discontinued.” See section 3 for additional detail.

**2.5.1.2 Hazardous Weather Outlook (product category HWO).** WFOs/WSOs forecasting a high risk of rip currents in the Day 1 forecast period of the SRF will include this information in the Day 1 Marine/Surf portion of the Hazardous Weather Outlook product (HWO); except in Pacific Region and Alaska Region which do not issue HWOs. See NWSI 10-517, *Multi-purpose Weather Products Specification*. WFOs / WSOs forecasting a high risk of rip currents for the Day 2 period of the SRF with high confidence may include this in the Day 2 Marine/Surf portion of the Hazardous Weather Outlook (HWO).

**2.5.1.3 Hurricane Local Statements (product category HLS).** When WFOs/WSOs begin to issue HLSs (NWSI 10-601), the next scheduled SRF will contain only the tropical cyclone headlines and refer users to the HLS, with a statement such as:

“The regularly scheduled SRF will be discontinued as long as tropical cyclone watches and warnings are in effect for the County Warning Area (CWA). Refer to the HLS for the latest watches and warnings in the CWA. The SRF will resume in its normal format after tropical cyclone watches and warnings are discontinued for the CWA.”

Key information normally carried in the SRF, such as surf height and rip currents (as well as other surf zone hazards), should also be included in the HLS.

Pacific Region will continue to issue SRFs when HLSs are in effect.

**2.6 Rip Currents.** The SRF is the primary product for providing routine rip current information. Rip current information in the SRF should be introduced using the phrase “Rip Current Risk” followed by the text qualifier (See 2.6.1 for definitions).

When a Moderate or High Risk of Rip Currents is forecast, refer to section 2.5.1.1 for the appropriate way to reference in the CFW and section 2.5.1.2 for the appropriate way to reference in the HWO.

**2.6.1 Three-Tiered Qualifiers.** Rip Current Outlooks in the SRF (and Rip Current Statement) will use the following, 3-tiered text qualifiers. The qualifiers indicate the likelihood of rip currents occurring. WFOs / WSOs should include the following definitions in their rip current associated text products:

**Low Risk.** Surf zone conditions are not expected to support the development of life threatening rip currents. However, life threatening rip currents often occur in the vicinity of groins, jetties, reefs, and piers.

**Moderate Risk.** Surf zone conditions are favorable for the development of life threatening rip currents.

**High Risk.** Surf zone conditions will likely support the development of life threatening rip currents.

**2.6.2 Moderate or High Risk.** WFOs / WSOs forecasting a Moderate or High Risk of Rip Currents will headline this information in the SRF. To ensure maximum notification of users, WFOs / WSOs forecasting a Moderate or High Risk of Rip Currents will refer to section 2.5.1.1 for specifications on how it can be addressed in the CFW, and 2.5.1.2 for how to address in the HWO. Offices may include call to action statements in the SRF.

**2.7 Updates, Amendments and Corrections.** SRFs will be updated when forecast conditions change significantly, especially when hazardous conditions arise. WFOs / WSOs will correct SRFs for format and grammatical errors.

### **3 Coastal / Lakeshore Hazard Message (product category CFW)**

**3.1 Mission Connection.** Coastal / Lakeshore Hazard Message products (AWIPS product category CFW) provide the public with detailed information on significant coastal / lakeshore events. Coastal / lakeshore events impact land-based and near shore interests along much of the United States coastline.

**3.2 CFW Products.** All CFW products contain VTEC except in Alaska Region where VTEC is not used in marine products. A single segmented product with more than one VTEC can be issued for situations with multiple hazards. See Appendix A, pages A-4 and A-5 for examples. The Event Names and Phenomena Codes are in Table 1.

Warnings	Watches
Coastal Flood Warning /CF.W/ Lakeshore Flood Warning /LS.W/ High Surf Warning /SU.W/	Coastal Flood Watch /CF.A/ Lakeshore Flood Watch /LS.A/
Advisories	Informational Statements
Coastal Flood Advisory /CF.Y/ Lakeshore Flood Advisory /LS.Y/ High Surf Advisory /SU.Y/	Used for coastal / lakeshore hazards that do not meet Advisory, Watch, or Warning criteria, as well as hazards that do not have Advisory, Watch, or Warning criteria (e.g., oil spill, rip current risk, re-directing to HLS). /CF.S/, /LS.S/, /RP.S/BH.S

**Table 1. CFW products table**

### 3.3 Issuance Guidelines

**3.3.1 Creation Software.** WFOs / WSOs will use AWIPS Interactive Forecast Preparation System (IFPS) Graphical Hazards Generation (GHG) software to generate CFW products. OCONUS WFOs / WSOs without GHG will use regionally approved software.

**3.3.2 Issuance Criteria.** CFW products are issued to provide the general public, shoreline and surf zone interests with detailed information on a wide spectrum of coastal / lakeshore hazards. WFOs / WSOs with Great Lakes or Coastal Waters Forecast areas of responsibility (see NWSI 10-302) issue Coastal/Lakeshore Hazard products.

**3.3.3 Issuance Time.** CFW products are non-scheduled, event-driven products. WFOs / WSOs should issue the initial warning, watch, advisory, informational CFW products when a coastal/lakeshore hazardous event is expected to meet or exceed warning, advisory, watch, informational criteria. WFOs / WSOs should issue updates at least every six to eight hours until the event ends or is canceled.

**3.3.4 Valid Time.** CFW products are valid from the time of release or specified time until cancelled, updated, replaced, or until the expiration time of the product. The valid time (event beginning and end time) is placed in the P-VTEC line and described in the headline.

**3.3.5 Product Expiration Time.** The product expiration time is the time when users can expect to receive an updated CFW.

**3.3.6 Watch Expiration Time.** The product expiration time is generally 12 hours after the issuance time and should coincide with the next expected update or when the event is forecast to end. The product expiration time is placed in the UGC string.

**3.3.7 Warning, Advisory and Informational Statement Expiration Time.** The product expiration time is generally 6 to 8 hours after the issuance time and should coincide with the next expected update or when the event is forecast to end. The product expiration time is placed in the UGC string.



**3.4 Coastal / Lakeshore Flood Watch.** A Coastal / Lakeshore Flood Watch informs users of coastal / lakeshore flooding that may have significant impacts. A Watch should be issued 12 to 48 hours in advance. See Appendix A, pages A-6 and A-7 for examples.

**3.5 Coastal / Lakeshore Flood Warning.** A Coastal / Lakeshore Flood Warning informs users that coastal/lakeshore flooding which poses a serious threat to life and property is occurring, imminent, or highly likely in the first to second forecast periods (first 12 to 24 hours). WFOs may occasionally issue warnings valid after the second forecast period when a strong likelihood of the event exists or when a longer advance notice is needed for public response. See Appendix A, pages A-8 and A-11 for examples.

**3.6 Coastal / Lakeshore Flood Advisory.** A Coastal / Lakeshore Flood Advisory informs users that minor flooding, such as minor tidal overflow, is occurring or is possible within 12 hours. Issuance of Coastal/ Lakeshore Flood Advisories is an NWS Regional option. See Appendix A, page A-12 for an example.

**3.7 High Surf Advisory and Warning.** A High Surf Advisory is issued when breaking wave action in the surf zone becomes a threat to life and property along the coast.

A High Surf Warning is issued when breaking wave action results in an especially heightened threat to life and property along the coast. High Surf Warnings are a NWS Regional option. High Surf Warnings should be headlined in the SRF, if the SRF is routinely issued by the WFO / WSO.

**3.7.1 High Surf and Rip Currents.** In many situations, life threatening rip currents occur along with high surf (advisory or warning) conditions. If rip currents are not the primary hazard, then rip current information can be included in a High Surf Advisory or Warning; however, the recommended method to handle this situation is to issue a High Surf Advisory / Warning (SU.Y or SU.W VTEC) in conjunction with a RP.S VTEC as a single segmented product. Both the High Surf and Rip Current Risk headlines should be headlined. See an example in Appendix A, page A-4. If rip currents are the primary hazard then rip current information should be issued using the Rip Current Statement (RP.S VTEC). See section 3.9 for more information on the Rip Current Statement.

**3.8 Informational Statements.** Informational statements may be used to describe hazards that do not meet Advisory, Watch, or Warning criteria, as well as hazards that do not have Advisory, Watch, or Warning criteria (e.g., rip currents, oil spill). Informational statements can also direct users to a Hurricane Local Statement (HLS) in certain situations. See the HLS discussion in Section 2.5.3. A WFO / WSO may choose to not issue informational statements for coastal areas where the shoreline is unsuitable for recreational swimming or difficult to access.

**3.8.1 Increasing Awareness of Surf Zone and Beach Hazards.** To further heighten awareness of rip currents or other hazards not meeting Advisory / Warning criteria in the surf zone, WFOs / WSOs can issue appropriate information using the Rip Current Statement (rip currents only) or the Beach Hazards Statement (other hazards) which are contained within the

Coastal Hazard Message (CFW). The Beach Hazards Statement has been designed to issue information on multiple hazards. If surf conditions are unusual but do not meet criteria, that information may be included in the Beach Hazards Statement. Only rip current information should be included in the Rip Current Statement.

**3.9 Rip Current Statement.** The Rip Current Statement (VTEC RP.S) informs the public and public safety officials about life threatening rip currents expected to occur. WFOs / WSOs will issue the Rip Current Statement to highlight an increased threat (moderate or high risk) from rip currents. Only rip current information should be included in the Rip Current Statement. WFOs should use the Surf Zone Forecast or the Beach Hazards Statement to highlight information on other surf zone hazards.

See section 2.6.1 for definitions of low, moderate and high risk of rip currents.

WFOs / WSOs should work with their Regional Headquarters to define seasons in which they will issue the Rip Current Statements.

See Appendix A, pages A-15 and A-16 for examples of Rip Current Statement formatting and content.

**3.10 Beach Hazards Statement (BHS).** The Beach Hazards Statement (VTEC BH.S) highlights information on many different beach hazards that do not meet advisory or warning criteria. WFOs / WSOs will issue the BHS to provide additional, more targeted information to its users and partners on hazards along beach / coastal areas and the waters of the surf zone. The BHS can be issued for (but not limited to) dangerous currents in the surf zone, unusually cold water temperatures, potential for lightning along the beach / shoreline, or unusual surf / wave conditions which do not meet advisory criteria. In coordination with other agencies, the product may also be issued to inform users of various types of environmental hazards (e.g., chemical spills, harmful algal blooms, high bacteria levels in the water, or potentially hazardous marine wildlife which may be impacting the area). Regions and WFOs / WSOs should adapt the BHS to serve the needs of their users.

A BHS may be issued for “Dangerous Swimming Conditions” in the surf zone which are created by different types of hazards occurring simultaneously. Hazards such as rough surf, longshore currents, structural currents and rip currents can all combine to create dangerous swimming conditions. *If rip currents are not the primary cause of the dangerous swimming conditions, they can be mentioned in the BHS. If rip currents are the only or the primary hazard, a Rip Current Statement should be issued to address the situation.*

WFOs / WSOs should work with their Regional Headquarters to define seasons in which they will issue the BHS.

See Appendix A, pages A-18 and A-19 for examples of BHS formatting and content.

**3.11 Technical Description.** CFWs follow the format and content described in this section.

**3.11.1 UGC Type.** CFWs will use the (Z) form of the UGC.

**3.11.2 MND Broadcast Instruction Line.** For watches and warnings, the phrase “URGENT – IMMEDIATE BROADCAST REQUESTED” is used.

**3.11.3 MND Product Type Line.** Only two headlines are permitted in the Product Type Line: Coastal Hazard Message or Lakeshore Hazard Message.

**3.11.4 Content.** The CFW may contain an overview section, but will include segmented forecast information.

**3.11.4.1 Overview Section.** The CFW overview section is optional. If included, it should contain at least one of the following items:

- a. Overview Headline – general headline statement that summarizes the hazardous coastal / lakeshore threat, area affected and expected time of development. The overview headline will begin and end with three periods (...).

Example:

...COASTAL FLOODING POSSIBLE SUNDAY AND SUNDAY NIGHT...

- b. Overview Text – a brief, non-technical description of the developing CFW event. The description may include the location and movement of large scale weather features (e.g., fronts, low pressure systems). Place a period “.” before the first line of this descriptive information.

**3.11.4.2 Segmented Forecast Information.** Each segment of the CFW will include a coastal / lakeshore hazard headline followed by a descriptive text describing why the product was issued. Each segment describes a specific hazardous CFW event(s) for the same geographical area.

- a. Headline – The CFW headline will include the following elements in the order shown:
  - (1) Leading ellipsis (...)
  - (2) Valid event names listed in Table 1.
  - (3) Event action phrase defined in Table 2.
  - (4) General event beginning day and time phrase.
  - (5) General event ending day and time phrase.
  - (6) Trailing ellipsis (...)

Generic Headline Format:

Used when CFW event is in effect:

...<CFW event name> <event action phrase> FROM <event beginning date and time phrase> TO <event ending date and time phrase>...

Used when CFW event product issuance time equals event beginning time:  
 ...<CFW event name> <event action phrase> UNTIL <event ending date and time phrase>...

Used to cancel a watch, warning, or advisory prior to event beginning date and time:

...<CFW event name> IS CANCELED...

Event Action Phrase. The event action phrase in the CFW headline corresponds with the VTEC action code. Table 2 lists appropriate phrases for CFW headlines:

VTEC Action Code	Description	Required Event Action Phrase	Include Time / Date phrase?
NEW	Initial Issuance	IN EFFECT	Yes
EXA	Expansion of event area	IN EFFECT	Yes
EXB	Expansion of event area and change to event valid time	IN EFFECT	Yes
CON	Continuation or update of event	REMAINS IN EFFECT	Yes
EXT	Extend/shorten event start and/or ending date/time	NOW IN EFFECT	Yes
EXP	Event approaching the expiration time. Used up to 30 minutes prior to event end time. *Note: Not valid for Watches.	WILL EXPIRE AT	Yes
	Event has expired. Used up to 30 minutes after event expiration time has passed. *Note: Not valid for Watches.	HAS EXPIRED	No
CAN	Event canceled prior to event end time	IS CANCELLED	No
UPG	Upgrade watch to warning/advisory or advisory to warning. No headline. *Note: Warnings cannot be upgraded.		

**Table 2. Event action phrases for CFW headlines.**

b. Descriptive Text. This section will provide the following CFW information:

- (1) National Weather Service attribution line. For the initial issuance, include the following phrase to begin the text:

THE NATIONAL WEATHER SERVICE IN [WFO NAME or LOCATION] HAS ISSUED A (e.g., COASTAL FLOOD, LAKESHORE FLOOD, HIGH SURF, RIP CURRENT, BEACH

HAZARDS) (WATCH / WARNING / ADVISORY/RISK STATEMENT\*).

\* RISK is used for RIP CURRENTS only

The attribution line is optional for subsequent issuances.

- c. Order of Segments. Informational CFWs are usually placed last in the order of segments. This order was designed to place the most important or time sensitive information near the beginning of the message. Order of segments is:

- (1) Cancellation
- (2) Warnings
- (3) Advisories
- (4) Watches
- (5) Informational

- d. Order of Headlines. If multiple headlines are required in a single segment, then the order of headlines will follow the order of segments above.

- e. Bullet Format. Bullet format CFWs help ensure brevity and more efficient communication of critical information. Bullets should be one or two sentences and used to present critical information for a coastal / lakeshore hazardous event. Bullets can be locally or regionally defined in order to meet user needs but generally consist of some or all of the following: Hazard Type (i.e., COASTAL FLOODING, LAKESHORE FLOODING, SURF, WAVES, TIDAL ANOMALY, RIP CURRENT RISK, etc.), Timing, Impact, or others as appropriate.

Each bulleted segment will be followed by:

- a) Brief precautionary / preparedness action statement (Call to Action (CTA)).
- b) Explanation of a watch / warning / advisory / risk (rip currents).

### 3.11.5 Format

<u>Product Format</u>	<u>Description of Entry</u>
WHaaii cccc ddhhmm CFWxxx	(WMO Heading) (AWIPS ID)
URGENT - IMMEDIATE BROADCAST REQUESTED <sup>(+)</sup> COASTAL/LAKESHORE HAZARD MESSAGE NATIONAL WEATHER SERVICE city state time am/pm time_zone day mon dd yyyy	(Broadcast Instruction Line) (Product Name) (Issuing Office) (Issuance time/date)
...<Overview headline statement>...	(Optional)
<General non precipitation weather synopsis>	(Optional - 1 to 3 paragraphs)
stZ001-005>015-ddhhmm- /k.aaa.cccc.pp.s.####.yymmddThhnnZ <sub>B</sub> -yymmddThhnnZ <sub>E</sub> / zone st-zone st-zone st- INCLUDING <THE CITIES OF> location...location time am/pm time_zone day mon dd yyyy	(UGC: Z & expiration time) (P-VTEC Line(s)) (Zone Names) (City/Location - optional) (Issuance time/date)
...WATCH, WARNING, ADVISORY, INFORMATIONAL HEADLINE(S)...	
<Descriptive Text> NWS attribution line	(Optional after initial issuance)
* Bullet1	Type, Order, and Number of bullets may be locally or regionally set.
* Bullet2	
* Bullet3	
* Etc.	
PRECAUTIONARY/PREPAREDNESS ACTIONS... (Call to Action (CTA) statements-Use blank lines between multiple CTAs)	CTA Begin Marker
&&	CTA End Marker
\$\$	(UGC Delimiter)
Name/Initials/Forecaster ID	(Optional after last segment)

**Figure 1. Generic format for CFWs**

<sup>+</sup> Broadcast Instruction Line used only for watches and warnings

**3.12 Updates, Cancellations, and Corrections.** WFOs / WSOs should update CFWs as follows:

- a) Coastal/Lakeshore Flood Watch: at least once every 12 hours until the event ends or is canceled, or when there is a change in timing, areal extent, or expected conditions.
- b) Warning / advisory / informational products: at least once every 6 to 8 hours until the event ends or is canceled, or when there is a change in timing, areal extent, or expected conditions.

Watches are either upgraded into warnings or advisories, or canceled. WFOs / WSOs will issue a CFW to upgrade an advisory to a warning or to downgrade a warning to an advisory.

WFOs / WSOs will issue a CFW to cancel a warning, advisory, or watch when the forecaster believes there is no longer a threat of the coastal/lakeshore hazard.

**3.13 Consistency with other NWS Products.** Forecasters will coordinate and ensure consistency among products within their WFO / WSO, and with neighboring WFOs / WSOs, the River Forecast Center(s) (RFC(s)), and the National Centers. For example, coordination with the RFC ensures product consistency when the combined effects of river discharge and storm surge or tidal piling affect river outlets to increase the severity of coastal / lakeshore flooding.

**3.13.1 Zone, Coastal/Surf Zone Forecasts.** CFW advisory / watch / warning products will be headlined in associated public zone forecasts. CFW advisory / watch / warning products will not be headlined in routine marine forecasts but should be headlined in Surf Zone Forecasts.

**3.13.2 Hazardous Weather Outlook (AWIPS Product HWO).** The HWO provides the public, media, and emergency managers with early notice of potentially hazardous conditions. Events valid within 48 hours may be referenced in the HWO, directing users to the CFW products for specific details on events. Coastal hazards not expected within 48 hours may be addressed in the HWO as an outlook product. See NWSI 10-517 for details on the HWO.

**3.13.3 Short Term Forecast (AWIPS Product NOW).** The Short Term Forecast provides users with a plain language description of current and short-term weather and flooding conditions for the County Warning Area (CWA) of a WFO / WSO. To comply with the intention of the product, coastal hazard information in the Short Term Forecast will be as brief as possible. Therefore, the Short Term Forecast augments, but does not replace, the CFW and its more specific details. See NWSI 10-517 for details on the NOW.

**3.13.4 Hurricane Local Statement (AWIPS Product HLS).** If no CFW products were issued by the WFO prior to the issuance of a tropical cyclone watch or warning, then no CFW products will be issued when tropical cyclone watches or warnings are in effect.

Complications occur when a CFW product is in effect and tropical cyclone watches and / or warnings are issued via the HLS. See Table 3 for guidance. In general, if the threat level of a tropical cyclone product equals or exceeds the threat level of an existing CFW, then the CFW will be discontinued. However, in cases where the threat of the CFW product exceeds that of the tropical cyclone watch, then the CFW product will continue to be issued as a stand-alone product along with the HLS.

If a Rip Current Statement or Beach Hazards Statement is in effect (via RP.S or BH.S in the CFW) to heighten awareness of a surf zone hazard and tropical cyclone watches / warnings are subsequently issued for those same zones, then the RP.S or BH.S will be cancelled and the hazard information will be provided within the HLS. For those zones for which a RP.S or BH.S is in effect and tropical cyclone watches/warnings are not issued, WFOs may cancel the RP.S or BH.S and replace it with a HU.S within the HLS.

<b>VTEC Event and Significance Level</b>	<b>Tropical Cyclone Watch / Warning Subsequently Issued via the HLS</b>	<b>Continue VTEC Event</b>	<b>Cancel VTEC Event</b>
Coastal Flood Watch /CF.A/	TC Watch		X
Coastal Flood Watch /CF.A/	TC Warning		X
Coastal Flood Advisory /CF.Y/	TC Watch	X	
Coastal Flood Advisory /CF.Y/	TC Warning		X
Coastal Flood Warning /CF.W/	TC Watch	X	
Coastal Flood Warning /CF.W/	TC Warning		X
High Surf Advisory /SU.Y/	TC Watch	X	
High Surf Advisory /SU.Y/	TC Warning		X
High Surf Warning (Pacific, Western Regions only) /SU.W/	TC Watch	X	
High Surf Warning (Pacific, Western Regions only) /SU.W/	TC Warning		X
Rip Current Statement /RP.S/	TC Watch		X
Rip Current Statement /RP.S/	TC Warning		X
Beach Hazards Statement/BH.S/	TC Watch		X
Beach Hazards Statement/BH.S/	TC Warning		X

**Table 3. CFW VTEC Actions When Tropical Cyclone Watches / Warnings Are Subsequently Issued.**

Finally, if tropical cyclone advisories are discontinued and coastal hazards are expected behind the departing tropical cyclone, then CFW products will be issued as appropriate.



## **4 Water Level Observations and Dissemination**

**4.1 Tidal Observations.** Real-time access of accurate water-level data is especially important during times of exceptionally high tide. WFOs / WSOs should maintain close contact with officials in coastal communities having access to, and interest in, water-level data augmenting official gauging systems/networks. Forecasters should be familiar with terminology associated with tide measurements.

The National Ocean Service (NOS) collects and distributes real-time tidal observations and predictions. The NOS Center for Operational Oceanographic Products and Services web site includes Physical Oceanographic Real Time System and Predictions with current tidal observations and daily high and low water tide predictions for tidal reference stations. The web site is:

<http://www.co-ops.nos.noaa.gov/>.

**4.2 NWS Tide Reports.** WFOs / WSOs that issue routine tide reports should issue them using the AWIPS product identifier TID. Other offices that only issue tide reports on an as-needed basis during significant coastal events may append the tide data to a Coastal / Lakeshore Message. See Appendix A, page A-21 for an example.

Reference tide reports to standard datums used by the NOS. For most areas the reference tidal datum is Mean Lower Low Water (MLLW).

**4.3 Great Lakes Water Levels.** Data for lake water levels are available from the U.S. Army Corps of Engineers and the NOS.

**4.4 NWS Great Lakes Water Level Report.** Some WFOs disseminate periodic water level reports, while other offices only issue reports on an as-needed basis. Water level reports are issued using the AWIPS product identifier OMR. See Appendix A, page A-22 for an example.

**APPENDIX A**

**Examples of Surf Zone Forecasts and NWS Coastal/Lakeshore Hazard Products**

**1 Surf Zone Forecast**

Example 1 – Headlining High Surf Advisory and High Risk of Rip Currents

Example 2 – Moderate Risk of Rip Currents Decreasing

**2 Multiple CFW VTECs in a Single Product**

Example 1 – High Surf Advisory and Rip Current Statement

Example 2 – Coastal Flood Advisory and Rip Current Statement

**3 Coastal / Lakeshore Flood Watch, Warnings and Advisories**

Example 1 – Lakeshore Flood Watch

Example 2 – Coastal Flood Watch

Example 3 – Coastal Flood Warning and Advisory

Example 4 – Lakeshore Flood Warning

Example 5 – Lakeshore Flood Advisory

Example 6 – Coastal Hazard Message with Multiple Functions

Example 7 – Lakeshore Hazard Message Canceling Lakeshore Flood Warning

Example 8 – High Surf Advisory Upgraded to a High Surf Warning

**4 Informational Statements**

Example 1 – Rip Current Statement

Example 2 – Rip Current Statement Announcing the Closing of a Beach

Example 3 – Beach Hazards Statement for Dangerous Swimming Conditions

Example 4 – Beach Hazards Statement for Longshore Current due to Southerly Swell

Example 5 – Beach Hazards Statement for Harmful Algal Bloom

**5 NWS Tide Report**

**6 Great Lakes Water Level Report**

**1 Surf Zone Forecasts**

**Example 1: Headlining High Risk of Rip Currents and High Surf Advisory**

FZUS54 KMOB 271323 CCA  
SRFMOB

SURF ZONE FORECAST  
NATIONAL WEATHER SERVICE MOBILE AL  
453 AM CDT THU MAR 27 2014

ALZ063-064-271800-  
LOWER MOBILE-LOWER BALDWIN-  
INCLUDING THE BEACHES OF...DAUPHIN ISLAND...FORT MORGAN...  
GULF SHORES...ORANGE BEACH  
453 AM CDT THU MAR 27 2014

...HIGH RISK OF RIP CURRENTS THROUGH FRIDAY EVENING...  
...HIGH SURF ADVISORY IN EFFECT FROM NOON TODAY TO MIDNIGHT CDT  
FRIDAY NIGHT...

.TODAY...  
BEACH WINDS.....SOUTHEAST WINDS AROUND 20 MPH.  
UVI INDEX.....VERY HIGH.  
WATER TEMPERATURE.....62 DEGREES AT BUOY 42012.  
BEACH TEMPERATURE.....AROUND 68.  
SURF HEIGHT.....2 TO 4 FEET.  
RIP CURRENT THREAT.....HIGH RISK OF RIP CURRENTS. WIND...WAVE...AND  
TIDAL CONDITIONS SUPPORT THE DEVELOPMENT OF LIFE THREATENING RIP  
CURRENTS. REMEMBER TO HEED THE ADVICE OF THE LOCAL BEACH PATROL  
AND FLAG WARNING SYSTEMS.

.TONIGHT...THROUGH SUNDAY  
SAME FORECAST PARAMETERS FOR EACH PERIOD.

TIDE INFORMATION FOR TODAY...

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**Example 2: Moderate Risk of Rip Currents Decreasing**

FZMY50 PGUM 271730  
SRFMY

SURF ZONE FORECAST FOR GUAM AND THE NORTHERN MARIANA ISLANDS  
NATIONAL WEATHER SERVICE TIYAN GU  
330 AM CHST FRI MAR 28 2014

.SYNOPSIS...MODERATE RISK OF LIFE THREATENING RIP CURRENTS TODAY BUT  
THE LIKELIHOOD OF RIP CURRENTS DECREASES TONIGHT AND SATURDAY.

\$\$  
GUZ001>004-280830-  
GUAM-ROTA-TINIAN-Saipan-  
330 AM CHST FRI MAR 28 2014

.TODAY...  
COASTAL WINDS.....NORTHEAST AT 10 TO 15 MPH.  
SURF ALONG NORTH FACING REEFS.....3 TO 5 FEET.  
SURF ALONG EAST FACING REEFS.....6 TO 8 FEET.  
SURF ALONG SOUTH FACING REEFS.....1 TO 3 FEET.

SURF ALONG WEST FACING REEFS.....1 TO 3 FEET.

PRIMARY SWELL.....EAST AT 4 TO 6 FEET.

PRIMARY PERIOD.....10 SECONDS.

SECONDARY SWELL.....NORTH AT AROUND 2 FEET.

SECONDARY PERIOD.....10 SECONDS.

RIP CURRENT THREAT.....MODERATE RISK OF RIP CURRENTS. WAVE CONDITIONS  
SUPPORT LIFE THREATENING RIP CURRENTS. ALWAYS HAVE A FLOTATION  
DEVICE WITH YOU IN THE WATER.

SEA SURFACE TEMPERATURE FROM RITIDIAN BUOY...82 DEGREES.  
MAXIMUM AFTERNOON HEAT INDEX.....AROUND 97.

.OUTLOOK...SURF WILL FALL 1 TO 2 FEET ALONG NORTH AND WEST FACING  
REEFS ON SATURDAY...REDUCING THE THREAT OF RIP CURRENTS.

TIDE INFORMATION FOR THE NEXT 24 HOURS...

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## 2 Multiple CFW VTECs in a single product

### Example 1: High Surf Advisory and Rip Current Statement

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WHUS42 KTBW 250830  
CFWTBW

URGENT - IMMEDIATE BROADCAST REQUESTED  
COASTAL HAZARD MESSAGE  
NATIONAL WEATHER SERVICE TAMPA BAY RUSKIN FL  
430 AM EDT TUE MAR 25 2014

...HIGH SURF AND DANGEROUS RIP CURRENTS EXPECTED AT AREA BEACHES  
THIS AFTERNOON THROUGH WEDNESDAY MORNING...

.A STRONG COLD FRONT WILL MOVE THROUGH THE REGION THIS  
MORNING...WITH GUSTY NORTHWEST WINDS ALLOWING SEAS TO BUILD TO  
ADVISORY LEVELS AND INCREASING THE THREAT FOR LIFE THREATENING RIP  
CURRENTS AT AREA BEACHES.

FLZ050-151-155-160-162-165-261600-  
/O.NEW.KTBW.SU.Y.0008.140325T1600Z-140326T1600Z/  
/O.NEW.KTBW.RP.S.0014.140325T1600Z-140326T1600Z/  
PINELLAS-COASTAL HILLSBOROUGH-COASTAL MANATEE-COASTAL SARASOTA-  
COASTAL CHARLOTTE-COASTAL LEE-  
430 AM EDT TUE MAR 25 2014

...HIGH SURF ADVISORY IN EFFECT FROM NOON TODAY TO NOON EDT  
WEDNESDAY...  
...HIGH RISK OF RIP CURRENTS FROM NOON EDT TODAY THROUGH WEDNESDAY  
MORNING...

THE NATIONAL WEATHER SERVICE IN TAMPA BAY RUSKIN HAS ISSUED A HIGH  
SURF ADVISORY...WHICH IS IN EFFECT FROM NOON TODAY TO NOON EDT  
WEDNESDAY. LIFE THREATENING RIP CURRENTS ARE LIKELY FROM NOON EDT  
TODAY THROUGH WEDNESDAY MORNING.

\* WAVES AND SURF...WAVES WILL BUILD TO 4 TO 6 FEET BY LATE THIS  
AFTERNOON...AND INCREASE TO 5 TO 7 FEET TONIGHT THROUGH EARLY  
WEDNESDAY.

\* TIMING...THIS AFTERNOON THROUGH WEDNESDAY MORNING.

\* IMPACTS...DANGEROUS BREAKING WAVES AND RIP CURRENTS CAN BE  
EXPECTED AT AREA BEACHES.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

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[HTTP://WWW.WEATHER.GOV/TAMPA](http://www.weather.gov/tampa)

**Example 2: Coastal Flood Advisory and Rip Current Statement**

COASTAL HAZARD MESSAGE  
NATIONAL WEATHER SERVICE CORPUS CHRISTI TX  
450 AM CDT MON SEP 16 2013

...COASTAL FLOOD ADVISORY IN EFFECT UNTIL TUESDAY...

...HIGH RISK OF RIP CURRENTS CONTINUES ALONG MID TEXAS COAST THROUGH TUESDAY...

...STRONG EASTERLY WINDS ALONG WITH STRONG SWELLS ASSOCIATED WITH HURRICANE INGRID WILL LEAD TO MINOR TIDAL OVERFLOW TODAY THROUGH TUESDAY. IN ADDITION...HIGH ENERGY SWELLS WILL MAINTAIN A SIGNIFICANT THREAT OF RIP CURRENTS ALONG GULF FACING BEACHES THROUGH TUESDAY.

TXZ242-243-245-247-162100-  
/O.EXT.KCRP.CF.Y.0001.000000T0000Z-130917T2100Z/  
/O.CON.KCRP.RP.S.0003.000000T0000Z-130918T0000Z/  
KLEBERG-NUECES-ARANSAS-CALHOUN-  
450 AM CDT MON SEP 16 2013

...COASTAL FLOOD ADVISORY NOW IN EFFECT UNTIL 4 PM CDT TUESDAY...

...HIGH RISK OF RIP CURRENT THROUGH TUESDAY EVENING...

\* COASTAL FLOODING...WATER LEVELS MAY RISE TO AROUND 2 TO 2 ½ FEET ABOVE MEAN SEA LEVEL ON THE GULF FACING SIDE OF THE BARRIER ISLANDS...ESPECIALLY DURING AND AROUND HIGH TIDE. WATER LEVELS ALONG AREA BAYS MAY APPROACH 2 FEET.

\* TIMING...NOW THROUGH TUESDAY AFTERNOON. LIFE THREATENING RIP CURRENTS LIKELY THROUGH TUESDAY.

\* IMPACTS...VEHICLE TRAFFIC ALONG GULF FACING BEACHES MAY BE HALTED AT TIMES DUE TO RISES IN THE WATER LEVEL. AT 2 FEET ABOVE MEAN SEA LEVEL (MSL)...MINOR FLOODING OCCURS ALONG BARRIER ISLANDS FACING THE

GULF OF MEXICO WITH STEADY PERIODS OF WATER AT THE DUNES. AT 2 1/2 FEET ABOVE MSL...BEACHES ARE COMPLETELY INUNDATED WITH WATER REACHING INTO THE DUNES WITH SOME BEACH ACCESS ROADS FLOODING. MINOR FLOODING ALONG AREA BAYS MAY OCCUR...ESPECIALLY ALONG LOW LYING AREAS ON THE WESTERN SIDE OF BAYS.

LIFE THREATENING RIP CURRENTS ARE ANTICIPATED TO OCCUR ALONG THE GULF FACING BEACHES OF THE MIDDLE TEXAS COAST. BOTH THE STRENGTH AND FREQUENCY OF THESE RIP CURRENTS WILL RESULT IN SURF THAT IS DANGEROUS FOR ALL LEVELS OF SWIMMERS.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

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### **3 Coastal/Lakeshore Flood Watch, Warnings and Advisories**

#### **Example 1: Lakeshore Flood Watch**

WHUS43 KMKX 010301  
CFWMKX

URGENT - IMMEDIATE BROADCAST REQUESTED  
LAKESHORE HAZARD MESSAGE  
NATIONAL WEATHER SERVICE MILWAUKEE/SULLIVAN WI  
901 PM CST MON JAN 31 2011

...STRENGTHENING NORTHEAST GALE WINDS WILL PRODUCE A PROLONGED PERIOD OF LARGE DAMAGING WAVES...

.NORTHEAST WINDS WILL INCREASE TO GALE FORCE BY THE MIDDLE OF TUESDAY AFTERNOON AND PERSIST THROUGH WEDNESDAY MORNING. A DEEPENING LOW PRESSURE SYSTEM TO THE SOUTH WILL CREATE A PROLONGED PERIOD OF STRONG NORTHEAST WINDS WHICH WILL PUSH LAKE WATERS UP AGAINST THE WEST AND SOUTHWEST SHORES CREATING LARGE WAVES.

WIZ052-060-066-071-072-011115-  
/O.CON.KMKX.LS.A.0001.110202T0000Z-110203T0000Z/  
SHEBOYGAN-OZAUKEE-MILWAUKEE-RACINE-KENOSHA-  
901 PM CST MON JAN 31 2011

...LAKESHORE FLOOD WATCH REMAINS IN EFFECT FROM TUESDAY EVENING THROUGH WEDNESDAY AFTERNOON...

\* LAKESHORE FLOODING: A PROLONGED PERIOD OF STRONG NORTHEAST WINDS WILL PUSH LAKE WATERS UP AGAINST THE WEST AND SOUTHWEST SHORES...RAISING OVERALL LAKE LEVELS ONE HALF FOOT WITH WAVE HEIGHTS REACHING 10 TO 15 FEET.

\* TIMING: TUESDAY EVENING THROUGH WEDNESDAY AFTERNOON.

\* IMPACTS: LARGE WAVES WILL PUSH WATER OVER NEAR-LAKE ROADWAYS...AS WELL AS CREATE FREEZING SPRAY THAT WILL COAT THEM WITH ICE. THE LARGE WAVES WILL ALSO PRODUCE WIDESPREAD SHORELINE EROSION...AND DAMAGE SHORELINE STRUCTURES IN UNPROTECTED AREAS. THE PROLONGED INTENSE WAVE ACTION MAY BREAK UP SOME ICE COVERED AREAS...PUSHING THE ICE ONTO THE SHORE CAUSING THE POTENTIAL FOR MORE DAMAGE.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

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## **Example 2: Coastal Flood Watch**

WHUS46 KEKA 281934  
CFWEKA

URGENT - IMMEDIATE BROADCAST REQUESTED  
COASTAL HAZARD MESSAGE  
NATIONAL WEATHER SERVICE EUREKA CA  
1234 PM PDT TUE SEP 28 2010

CAZ001-002-290345-  
/O.NEW.KEKA.CF.A.0001.100930T0300Z-101001T0300Z/  
REDWOOD COAST-MENDOCINO COAST-  
1234 PM PDT TUE SEP 28 2010

...COASTAL FLOOD WATCH IN EFFECT FROM WEDNESDAY EVENING THROUGH THURSDAY EVENING...

THE NATIONAL WEATHER SERVICE IN EUREKA HAS ISSUED A COASTAL FLOOD WATCH...WHICH IS IN EFFECT FROM WEDNESDAY EVENING THROUGH THURSDAY EVENING.



\* COASTAL FLOODING: A NW SWELL OF 18 TO 22 FEET AT 18 SECONDS WILL COMBINE WITH 40 KNOT WESTERLY WINDS AND HIGH TIDES UP TO 9.4 FEET TO PRODUCE COASTAL FLOODING.

\* TIMING: THE GREATEST THREAT WILL OCCUR DURING HIGH TIDES AT 640 AM PDT THU AND 440 PM PDT THU.

\* IMPACTS: FLOOD PRONE AREAS...SUCH AS KING SALMON...WILL EXPERIENCE SIGNIFICANT FLOODING WITH WATERS ENTERING HOMES IN THE LOWEST LYING AREAS FOR A FEW HOURS SURROUNDING HIGH TIDES.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

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**Example 3: Coastal Flood Warning and Advisory**

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WHUS41 KBOX 260903

CFWBOX

COASTAL HAZARD MESSAGE

NATIONAL WEATHER SERVICE TAUNTON MA

503 AM EDT WED MAR 26 2014

...MINOR TO MODERATE COASTAL FLOODING IS EXPECTED DURING THE MORNING HIGH TIDE CYCLE ACROSS MANY NORTH AND EAST FACING COASTLINES FROM BOSTON TO NANTUCKET...

A VERY POWERFUL OCEAN STORM WILL PRODUCE A STORM SURGE OF 2 TO 3 FEET AND WAVES 15 TO 25 FEET A SHORT DISTANCE OFFSHORE. HIGHEST SURGE AND WAVE ACTION WILL BE IN THE VICINITY OF THE CAPE AND NANTUCKET...WHERE A COASTAL FLOOD WARNING REMAINS IN EFFECT. A COASTAL FLOOD ADVISORY REMAINS POSTED FOR BOSTON TO PLYMOUTH AND THE NORTHEAST AND EAST FACING SHORELINE OF MARTHA/S VINEYARD.

MAZ022-024-261400-

/O.CON.KBOX.CF.W.0002.140326T1000Z-140326T1400Z/

BARNSTABLE MA-NANTUCKET MA-

503 AM EDT WED MAR 26 2014

...COASTAL FLOOD WARNING REMAINS IN EFFECT UNTIL 10 AM EDT THIS MORNING...

\* LOCATION...NORTH SIDE AND OCEAN SIDE OF CAPE COD AND THE NORTH AND EAST SHORELINES OF NANTUCKET.

\* COASTAL FLOODING...MINOR TO MODERATE COASTAL FLOODING IS EXPECTED. A STORM SURGE OF 2.5 TO 3 FEET IS LIKELY WITH WAVES UP TO 25 FEET JUST EAST OF CAPE COD AND NANTUCKET.

\* TIMING...AROUND THE TIME OF THE MORNING HIGH TIDE WHICH OCCURS 8 TO 9 AM AT MOST LOCATIONS IN THE WARNING AREA.

\* IMPACTS...A NUMBER OF VULNERABLE SHORE ROADS INCLUDING SEVERAL ABOUT THE NANTUCKET HARBOR AREA WILL BE SUBJECT TO FLOODING. SIGNIFICANT EROSION IS ALSO LIKELY ALONG THE CAPE COD BAY AND OCEAN SIDES OF CAPE COD AS WELL AS THE EAST SIDE OF NANTUCKET.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

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ALL TIDE HEIGHTS ARE RELATIVE TO MEAN LOWER LOW WATER. TIME OF HIGH TOTAL TIDES ARE APPROXIMATE TO THE NEAREST HOUR.

LOCATION	HIGH TIDE/TIME	LOW TIDE/TIME
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MAZ015-016-019-023-261400-  
**/O.CON.KBOX.CF.Y.0004.140326T1000Z-140326T1400Z/**  
SUFFOLK MA-EASTERN NORFOLK MA-EASTERN PLYMOUTH MA-DUKES MA-  
503 AM EDT WED MAR 26 2014

...COASTAL FLOOD ADVISORY REMAINS IN EFFECT UNTIL 10 AM EDT THIS MORNING...

\* LOCATION...MASSACHUSETTS EAST COAST FROM BOSTON TO PLYMOUTH.

\* COASTAL FLOODING...MINOR COASTAL FLOODING IS LIKELY. AN ISOLATED POCKET OF MODERATE COASTAL FLOODING IS POSSIBLE BETWEEN HULL AND PLYMOUTH.

\* TIMING...AROUND THE TIME OF THE MORNING HIGH TIDE WHICH OCCURS NEAR 8 AM AT MOST LOCATIONS IN THE ADVISORY AREA.

\* IMPACTS...FLOODING OF ESPECIALLY VULNERABLE SHORE ROADS MAY CAUSE BRIEF CLOSURES AROUND THE TIME OF HIGH TIDE. SOME EROSION IS ALSO POSSIBLE TO SHORELINES EXPOSED TO HIGH WAVE ACTIVITY.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

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ALL TIDE HEIGHTS ARE RELATIVE TO MEAN LOWER LOW WATER. TIME OF HIGH TOTAL TIDES ARE APPROXIMATE TO THE NEAREST HOUR.

LOCATION	HIGH TIDE/TIME	LOW TIDE/TIME
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FOR THE LATEST UPDATES...PLEASE VISIT OUR WEBPAGE AT  
[WWW.WEATHER.GOV/BOSTON](http://WWW.WEATHER.GOV/BOSTON)

YOU CAN FOLLOW US ON FACEBOOK AT  
[WWW.FACEBOOK.COM/US.NATIONALWEATHERSERVICE.BOSTON.GOV](http://WWW.FACEBOOK.COM/US.NATIONALWEATHERSERVICE.BOSTON.GOV)

YOU CAN FOLLOW US ON TWITTER AT @NWSBOSTON

#### **Example 4: Lakeshore Flood Warning**

WHUS43 KIWX 111503  
CFWIWX

URGENT - IMMEDIATE BROADCAST REQUESTED  
LAKESHORE HAZARD MESSAGE  
NATIONAL WEATHER SERVICE NORTHERN INDIANA  
1103 AM EDT MON JUL 11 2011

...DANGEROUS RAPIDLY CHANGING WATER LEVELS ARE EXPECTED THIS AFTERNOON AND INTO THE EARLY EVENING HOURS...

.DANGEROUS RAPIDLY CHANGING WATER LEVELS ARE EXPECTED THIS AFTERNOON IN RESPONSE TO THE LINE OF SEVERE THUNDERSTORMS THAT CROSSED THE LAKE LATE THIS MORNING. WATER LEVELS WILL HAVE LARGE

FLUCTUATIONS THROUGH AT LEAST EARLY THIS EVENING ALONG ALL COASTAL BEACHES. EXPECT DANGEROUS RIP CURRENTS TOO.

INZ003-MIZ077-112315-  
/O.NEW.KIWX.LS.W.0001.110711T1503Z-110712T0000Z/  
LA PORTE-BERRIEN-  
1103 AM EDT MON JUL 11 2011 /1003 AM CDT MON JUL 11 2011/

...LAKESHORE FLOOD WARNING IN EFFECT UNTIL 8 PM EDT /7 PM CDT/ THIS EVENING...

THE NATIONAL WEATHER SERVICE IN NORTHERN INDIANA HAS ISSUED A LAKESHORE FLOOD WARNING...WHICH IS IN EFFECT UNTIL 8 PM EDT /7 PM CDT/ THIS EVENING.

\* LAKESHORE FLOODING...RAPID CHANGES IN WATER LEVELS ARE EXPECTED THIS AFTERNOON AND INTO THE EARLY EVENING HOURS.

\* TIMING...THROUGH 8PM EDT/7PM CDT THIS EVENING.

\* IMPACTS...HIGH RISK OF RIP CURRENTS AND WATER LEVELS MAY SURGE TO UNUSUALLY HIGH LEVELS ON AREA BEACHES SEVERAL TIMES.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

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#### **Example 5: Lakeshore Flood Advisory**

WHUS43 KMQT 310222  
CFWMQT

URGENT - IMMEDIATE BROADCAST REQUESTED  
LAKESHORE HAZARD MESSAGE  
NATIONAL WEATHER SERVICE MARQUETTE MI  
1022 PM EDT MON MAY 30 2011

...RAPID CHANGES IN WATER LEVEL NEAR LAKE SUPERIOR...

.A COMPLEX OF THUNDERSTORMS THAT PASSED OVER LAKE SUPERIOR THIS AFTERNOON HAS CAUSED A SEICHE ON LAKE SUPERIOR. OBSERVERS AND AUTOMATED STATION REPORTS INDICATE LAKE LEVELS HAVE VARIED BY AS MUCH AS 4 TO 6 FEET IN ONLY A COUPLE OF HOURS AT SOME LOCATIONS.

MIZ001-003>007-311200-  
/O.NEW.KMQT.LS.Y.0001.110531T0222Z-110531T1200Z/  
KEWEENAW-NORTHERN HOUGHTON-BARAGA-MARQUETTE-ALGER-LUCE-  
1022 PM EDT MON MAY 30 2011

...LAKESHORE FLOOD ADVISORY IN EFFECT UNTIL 8 AM EDT TUESDAY...

THE NATIONAL WEATHER SERVICE IN MARQUETTE HAS ISSUED A LAKESHORE  
FLOOD ADVISORY...WHICH IS IN EFFECT UNTIL 8 AM EDT TUESDAY.

\* LAKE SHORE FLOODING: EXPECT MINOR LAKE SHORE FLOODING IN SOME  
AREAS...ESPECIALLY SHALLOW BAYS...DURING TIMES WHEN THE WATER  
LEVELS RISE SIGNIFICANTLY.

\* TIMING: LAKE SUPERIOR WATER LEVELS WILL CONTINUE TO VARY BY A FEW  
FEET THROUGH THE NIGHT. THE VARIATIONS IN WATER LEVEL SHOULD  
DIMINISH WITH TIME.

\* IMPACTS: SUDDEN WATER LEVEL RISES MAY WASH SMALL BOATS ONSHORE  
AND CAUSE MINOR FLOODING IN LOW LYING AREAS.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

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**Example 6: Coastal Hazard Message with multiple functions**

WHUS41 KOKX 190309  
CFWOKX

URGENT - IMMEDIATE BROADCAST REQUESTED  
COASTAL HAZARD MESSAGE  
NATIONAL WEATHER SERVICE NEW YORK NY  
1109 PM EDT WED MAY 18 2011

...MINOR COASTAL FLOODING ACROSS COASTAL AREAS OF WESTERN LONG  
ISLAND SOUND...

NYZ179-190415-  
/O.CAN.KOKX.CF.W.0004.000000T0000Z-110519T0400Z/  
SOUTHERN NASSAU-  
1109 PM EDT WED MAY 18 2011

...COASTAL FLOOD WARNING IS CANCELLED...

THE NATIONAL WEATHER SERVICE IN UPTON HAS CANCELLED THE COASTAL FLOOD WARNING.

HIGH TIDE HAS PASSED AND COASTAL FLOODING IS NO LONGER ANTICIPATED.

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NJZ006-NYZ072-074-075-080-178-190415-  
/O.CAN.KOKX.CF.Y.0009.000000T0000Z-110519T0400Z/  
HUDSON-NEW YORK (MANHATTAN)-RICHMOND (STATEN ISLAND)-  
KINGS (BROOKLYN)-SOUTHWESTERN SUFFOLK-SOUTHERN QUEENS-  
1109 PM EDT WED MAY 18 2011

...COASTAL FLOOD ADVISORY IS CANCELLED...

THE NATIONAL WEATHER SERVICE IN UPTON HAS CANCELLED THE COASTAL FLOOD ADVISORY.

HIGH TIDE HAS PASSED AND COASTAL FLOODING IS NO LONGER ANTICIPATED.

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CTZ009-010-NYZ071-073-078-176-177-190700-  
/O.CON.KOKX.CF.Y.0009.000000T0000Z-110519T0700Z/  
SOUTHERN FAIRFIELD-SOUTHERN NEW HAVEN-SOUTHERN WESTCHESTER-  
BRONX-  
NORTHWESTERN SUFFOLK-NORTHERN QUEENS-NORTHERN NASSAU-  
1109 PM EDT WED MAY 18 2011

...COASTAL FLOOD ADVISORY REMAINS IN EFFECT UNTIL 3 AM EDT THURSDAY...

A COASTAL FLOOD ADVISORY REMAINS IN EFFECT UNTIL 3 AM EDT THURSDAY.

\* LOCATIONS...COASTLINE ALONG WESTERN LONG ISLAND SOUND

\* TIDAL DEPARTURES...AROUND 1 FT ABOVE NORMAL DURING THE TIMES OF HIGH TIDE TONIGHT.

\* TIMING...11 PM TO 3 AM TONIGHT.

\* IMPACTS...WIDESPREAD MINOR COASTAL FLOODING.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

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**Example 7: Lakeshore Hazard Message to Cancel Lakeshore Warning**

WHUS43 KIWX 112335  
CFWIWX

URGENT - IMMEDIATE BROADCAST REQUESTED  
LAKESHORE HAZARD MESSAGE  
NATIONAL WEATHER SERVICE NORTHERN INDIANA  
735 PM EDT MON JUL 11 2011

INZ003-MIZ077-120045-  
/O.CAN.KIWX.LS.W.0001.000000T0000Z-110712T0000Z/  
LA PORTE-BERRIEN-  
735 PM EDT MON JUL 11 2011 /635 PM CDT MON JUL 11 2011/

...LAKESHORE FLOOD WARNING IS CANCELLED...

THE NATIONAL WEATHER SERVICE IN NORTHERN INDIANA HAS CANCELLED  
THE LAKESHORE FLOOD WARNING.

WAVE HEIGHTS WILL CONTINUE TO SUBSIDE OVER THE NEXT SEVERAL HOURS  
AS WINDS WEAKEN FURTHER. THE RISK FOR LAKESHORE FLOODING HAS  
SUBSIDED AS A RESULT. THOSE WANDERING ONTO THE BEACHES SHOULD USE  
CAUTION IN AREAS WITH LOCALLY HIGHER WAVES.

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**Example 8: High Surf Advisory upgraded to High Surf Warning**

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WHZS40 NSTU 210137  
CFWPPG

URGENT - IMMEDIATE BROADCAST REQUESTED  
COASTAL HAZARD MESSAGE  
NATIONAL WEATHER SERVICE PAGO PAGO AS  
237 PM SST THU MAR 20 2014

ASZ001-002-211345-  
TUTUILA-AUNUU-MANUA-  
237 PM SST THU MAR 20 2014

...HIGH SURF ADVISORY IS NOW UPGRADED TO A HIGH SURF WARNING...

\* SURF...LARGE SURFS HAD OVERTOPPED SEAWALLS ALONG THE SOUTHERN SHORELINES SINCE THIS MORNING. HAZARDOUS SURFS OF 13 TO 16 FT WILL CONTINUE TO IMPACT SOUTH FACING SHORES OF ALL ISLANDS.

\* TIMING...UNTIL FRIDAY AFTERNOON.

\* IMPACTS...LARGE SURFS AND STRONG RIP CURRENTS.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

#### **4 Informational Statements**

##### **Example 1: Rip Current Statement**

COASTAL HAZARD MESSAGE  
NATIONAL WEATHER SERVICE MIAMI FL  
1137 AM EDT THU JUN 6 2013

...HIGH RISK OF RIP CURRENTS THROUGH THIS EVENING ALONG THE GULF COAST...

...HIGHER THAN NORMAL WATER LEVELS ALONG THE GULF COAST THROUGH THIS EVENING...

.LIFE THREATENING RIP CURRENTS ALONG THE GULF COAST BEACHES DUE TO PERSISTENT ONSHORE FLOW AND ROUGH SURF WILL CONTINUE THROUGH TODAY AS TROPICAL STORM ANDREA CONTINUES TO LIFT NORTH AND NORTHEAST ACROSS THE NORTHEASTERN GULF OF MEXICO AND THE FLORIDA BIG BEND. WATER LEVELS ARE CURRENTLY RUNNING AROUND ONE FOOT ABOVE NORMAL ALONG THE GULF COAST AREAS TODAY. THIS COULD LEAD TO MINIMAL COASTAL FLOODING CONCERNS AT AND AROUND THE TYPICALLY VULNERABLE AREAS...ESPECIALLY AROUND THE HIGH TIDE CYCLES AT NOON AND AROUND 8 PM THIS EVENING.

FLZ069-070600-  
/O.NEW.KMFL.RP.S.0015.130606T1537Z-130607T0600Z/  
COASTAL COLLIER-  
1137 AM EDT THU JUN 6 2013

...HIGH RISK OF RIP CURRENTS THROUGH THIS EVENING ALONG THE GULF COAST...



...HIGHER THAN NORMAL WATER LEVELS ALONG THE GULF COAST THROUGH THIS EVENING...

THE NATIONAL WEATHER SERVICE IN MIAMI IS EXPECTING LIFE THREATENING RIP CURRENTS THROUGH LATE TONIGHT.

\* TIMING...STRONG AND FREQUENT RIP CURRENTS AND HIGHER THAN NORMAL WATER LEVELS WILL CONTINUE THROUGH INTO TONIGHT BEFORE SUBSIDING INTO FRIDAY MORNING.

\* IMPACTS...LIFE THREATENING RIP CURRENTS AND MINOR BEACH EROSION. MINOR COASTAL FLOODING WILL REMAIN POSSIBLE...MAINLY AROUND THE TYPICALLY VULNERABLE LOCATIONS ALONG THE GULF COAST THROUGH THE NOON HIGH TIDE CYCLE AND AROUND THE EVENING HIGH TIDE TODAY. THE EVENING HIGH TIDE CYCLE WILL BE AROUND 8 PM THIS EVENING.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

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## **Example 2: Rip Current Statement Highlighting Beach Flags and Closing of Beach**

COASTAL HAZARD MESSAGE  
NATIONAL WEATHER SERVICE TALLAHASSEE FL  
709 AM EDT MON APR 7 2014

...THERE IS A HIGH RISK OF RIP CURRENTS AT THE BEACHES OF THE FLORIDA BIG BEND AND PANHANDLE TODAY...

...THERE IS A HIGH RISK OF RIP CURRENTS AT THE BEACHES OF BAY AND GULF COUNTIES ON TUESDAY AND A MODERATE RISK OF RIP CURRENTS AT THE BEACHES OF WALTON AND FRANKLIN COUNTIES...

..A DEVELOPING LOW PRESSURE SYSTEM OFF TO OUR WEST WILL MOVE NORTHEASTWARD INTO THE OHIO RIVER VALLEY TODAY. A LONG AND PERSISTENT FETCH OF INCREASING SOUTHEAST TO SOUTHERLY WINDS ARE EXPECTED TO REACH 15 TO 20 MPH WITH HIGHER GUSTS AT THE AREA BEACHES. THIS WILL PRODUCE A LARGE AREA OF BREAKING WAVES OF 3 TO 5 FEET WITH SOME HIGHER SETS AT THE PANHANDLE BEACHES TODAY AND 2 TO 4 FEET WITH HIGHER SETS AT THE BIG BEND BEACHES. ALTHOUGH WINDS WILL BECOME BRIEFLY OFFSHORE ACROSS THE BEACHES LATER TONIGHT AND ON TUESDAY...THEY ARE EXPECTED TO INCREASE OUT OF THE WEST AGAIN BY LATE IN THE DAY. THEREFORE...WE STILL EXPECT A HIGH RISK OF RIP CURRENTS TO CONTINUE AT THE BAY AND GULF COUNTY BEACHES ON

TUESDAY...WITH A DECREASE TO A MODERATE RISK AT THE BEACHES OF WALTON AND FRANKLIN COUNTIES.

FLZ108-112-114-115-081100-

/O.NEW.KTAE.RP.S.0022.140407T1200Z-140408T1100Z/

SOUTH WALTON-COASTAL BAY-COASTAL GULF-COASTAL FRANKLIN-

709 AM EDT MON APR 7 2014 /609 AM CDT MON APR 7 2014/

...A HIGH RIP CURRENT RISK IS IN EFFECT THROUGH TUESDAY MORNING...

THE NATIONAL WEATHER SERVICE IN TALLAHASSEE HAS ISSUED A HIGH RIP CURRENT RISK...WHICH IS IN EFFECT THROUGH TUESDAY MORNING.

\* LOCATION...THE BEACHES OF WALTON...BAY...GULF...AND FRANKLIN COUNTIES.

\* TIMING...TODAY AND TONIGHT.

\* **BEACH FLAGS...FORECAST TO BE DOUBLE RED WITH THE BEACHES CLOSED.**

\* SURF...3 TO 5 FEET WITH HIGHER SETS AT THE PANHANDLE BEACHES AND 2 TO 4 FEET.

\* IMPACTS...THE SURF AND RIP CURRENTS WILL BE LIFE THREATENING TO ANYONE ENTERING THE WATER TODAY.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

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**Example 3: Beach Hazards Statement for Dangerous Swimming Conditions**

LAKESHORE HAZARD MESSAGE  
NATIONAL WEATHER SERVICE GRAND RAPIDS MI  
404 AM EDT WED JUL 24 2013

MIZ064-071-241615-  
/O.CON.KGRR.BH.S.0008.000000T0000Z-130724T1800Z/  
ALLEGAN-VAN BUREN-  
INCLUDING THE BEACHES OF...OVAL BEACH...WEST SIDE PARK...  
SAUGATUCK DUNES STATE PARK...DOUGLAS BEACH...NORTH BEACH...  
SOUTH BEACH...VAN BUREN STATE PARK  
404 AM EDT WED JUL 24 2013

...BEACH HAZARDS STATEMENT REMAINS IN EFFECT UNTIL 2 PM EDT THIS  
AFTERNOON...

- \* HIGH WAVE ACTION AND DANGEROUS SWIMMING CONDITIONS EXPECTED.
- \* STRONG STRUCTURAL CURRENTS...EXPECTED.
- \* STRONG LONGSHORE CURRENTS...EXPECTED.
- \* RIP CURRENTS...POSSIBLE.
- \* LOCATION...BEACHES FROM ST. JOSEPH TO WHITEHALL.
- \* WITH STRONG NORTH WINDS LASTING INTO EARLY AFTERNOON...BEACHES  
WITH PARTICULARLY DANGEROUS CONDITIONS INCLUDE...NORTH BEACH IN  
SOUTH HAVEN...HOLLAND STATE PARK.
- \* OVERVIEW/POTENTIAL IMPACTS...STRONG WINDS FROM THE NORTH WILL  
RESULT IN LARGE WAVES AND STRONG CURRENTS MOVING FROM NORTH TO  
SOUTH.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

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WEATHER.GOV/GRR

**Example 4: Beach Hazards Statement for Longshore Currents due to southerly swell**

COASTAL HAZARD MESSAGE  
NATIONAL WEATHER SERVICE SAN FRANCISCO BAY AREA  
304 AM PDT THU JUN 6 2013

...A HIGH ENERGY SOUTHERLY SWELL IS EXPECTED TO IMPACT THE COAST  
TODAY THROUGH LATE FRIDAY NIGHT...

.A HIGH ENERGY LONG PERIOD SOUTHERLY SWELL TRAIN IS EXPECTED  
TO REACH THE COASTAL WATERS TODAY THROUGH LATE FRIDAY NIGHT. THIS  
SWELL WILL RESULT IN DANGEROUS LONGSHORE CURRENTS AND LARGE  
SHORE BREAK AT BEACHES ALONG THE SANTA CRUZ COAST. STRONG  
LONGSHORE CURRENTS CAN BE EXPECTED AT CARMEL BEACH AS WELL AS THIS  
SWELL TRAIN MOVES THROUGH THE WATERS.

CAZ530-071015-  
/O.CON.KMTR.BH.S.0009.130606T1200Z-130607T1800Z/  
SOUTHERN MONTEREY BAY AND BIG SUR COAST-  
304 AM PDT THU JUN 6 2013

...BEACH HAZARDS STATEMENT REMAINS IN EFFECT THROUGH FRIDAY  
MORNING...

- \* LOCATION...CARMEL BEACH.
- \* TIMING...TODAY INTO FRIDAY MORNING.
- \* IMPACTS...STRONG SOUTHERLY LONGSHORE CURRENT.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

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[HTTP://WWW.WEATHER.GOV/SANFRANCISCO](http://www.weather.gov/sanfrancisco)

**Example 5: Beach Hazards Statement for Harmful Algal Bloom**

WHUS42 KTBW 050254  
CFWTBW

URGENT - IMMEDIATE BROADCAST REQUESTED  
COASTAL HAZARD MESSAGE

NATIONAL WEATHER SERVICE TAMPA BAY RUSKIN FL  
954 PM EST MON FEB 4 2013

FLZ060-062-065-060000-  
/O.CON.KTBW.BH.S.0003.000000T0000Z-130208T0500Z/  
SARASOTA-CHARLOTTE-LEE-  
954 PM EST MON FEB 4 2013

...BEACH HAZARDS STATEMENT REMAINS IN EFFECT THROUGH THURSDAY  
EVENING...

\* FLORIDA RED TIDE...A HARMFUL ALGAL BLOOM OF KARENIA BREVIS ALSO  
KNOWN AS FLORIDA RED TIDE HAS BEEN IDENTIFIED ALONG PORTIONS OF THE  
SOUTHWEST FLORIDA COAST. OVER THE PAST FEW DAYS REPORTS OF  
RESPIRATORY IRRITATION HAVE BEEN RECEIVED FROM SARASOTA AND  
CHARLOTTE COUNTIES. REPORTS OF DEAD FISH HAVE BEEN RECEIVED FROM  
CHARLOTTE COUNTY.

NOAA RESPIRATORY IMPACT FORECAST:

SARASOTA COUNTY: ALONGSHORE/GULF SIDE AND IN THE BAY REGIONS...HIGH  
RESPIRATORY IMPACTS ARE POSSIBLE THROUGH THURSDAY.

CHARLOTTE COUNTY AND NORTHERN LEE COUNTY: ALONGSHORE/GULF  
SIDE...HIGH RESPIRATORY IMPACTS ARE POSSIBLE THROUGH THURSDAY. BAY  
REGIONS...HIGH RESPIRATORY IMPACTS POSSIBLE THROUGH THURSDAY.

CENTRAL AND SOUTHERN LEE COUNTY: ALONGSHORE/GULF SIDE...HIGH  
RESPIRATORY IMPACTS ARE POSSIBLE THROUGH THURSDAY.

PRECAUTIONARY/PREPAREDNESS ACTIONS...ALGAL BLOOMS SUCH AS RED TIDE  
ARE TYPICALLY PATCHY IN NATURE. AS A RESULT...IMPACTS WILL BE PERIODIC  
AND WILL NOT AFFECT THE ENTIRE REGION CONTINUOUSLY FOR THE  
DURATION OF THE EVENT.

HUMANS AND OTHER MAMMALS MAY EXPERIENCE RESPIRATORY SYMPTOMS  
WHEN AN ALGAL BLOOM OF THE RED TIDE ORGANISM IS PRESENT ALONG THE  
COAST AND WINDS BLOW THE AEROSOL IT PRODUCES ON SHORE. SYMPTOMS  
ARE GENERALLY TEMPORARY...BUT CAN INCLUDE COUGHING...SNEEZING...AND  
ITCHING AND TEARING EYES.

A HIGH RESPIRATORY IMPACT FORECAST MEANS THAT MOST PEOPLE AT THE  
BEACH MAY NOTICE THESE RESPIRATORY SYMPTOMS. PEOPLE WITH SEVERE  
OR CHRONIC RESPIRATORY CONDITIONS WILL LIKELY BE AFFECTED.

PEOPLE WITH SEVERE OR CHRONIC RESPIRATORY CONDITIONS ARE TYPICALLY MORE SENSITIVE TO RED TIDE AEROSOLS. PEOPLE WHO EXPERIENCE UNCOMFORTABLE SYMPTOMS...SHOULD CONSIDER LEAVING THE SURROUNDING AREA IN FAVOR OF NEARBY BEACHES THAT ARE NOT IMPACTED BY THIS RED TIDE. FOR MORE HEALTH INFORMATION...PLEASE VISIT [HTTP://WWW.MYFLORIDAEH.COM/MEDICINE/AQUATIC/REDTIDE.HTM](http://www.myfloridaeh.com/MEDICINE/AQUATIC/REDTIDE.HTM) OR SPEAK TO A MEDICAL PROFESSIONAL 24/7 VIA THE FLORIDA POISON INFORMATION CENTER TOLL FREE HOTLINE AT 1-800-222-1222. IF SYMPTOMS ARE SEVERE...CONSULT YOUR HEALTH CARE PROVIDER.

DO NOT HARVEST DISTRESSED OR DEAD FISH. ALWAYS CHECK ON THE STATUS OF SHELLFISH HARVESTING AREAS BEFORE RECREATIONAL HARVESTING BY CONTACTING THE FLORIDA DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES:

[HTTP://WWW.FLORIDAAQUACULTURE.COM/REDTIDE/REDTIDEINFO.HTM](http://www.floridaaquaculture.com/redtide/redtideinfo.htm).

INFORMATION SOURCES...HARMFUL ALGAL BLOOM (HAB) FORECAST INFORMATION IS PROVIDED BY THE NATIONAL OCEAN SERVICE CENTER FOR OPERATIONAL OCEANOGRAPHIC PRODUCTS AND SERVICES...WITH DATA PROVIDED BY THE FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION (FWC) FISH AND WILDLIFE RESEARCH INSTITUTE AND MOTE MARINE LABORATORY. FOR DETAILED INFORMATION ON THIS HAB...PLEASE VISIT THE FOLLOWING WEBSITES:

[HTTP://TIDESANDCURRENTS.NOAA.GOV/HAB](http://tidesandcurrents.noaa.gov/hab)  
[HTTP://MYFWC.COM/RESEARCH/REDTIDE](http://myfwc.com/research/redtide)  
[HTTP://COOLGATE.MOTE.ORG/BEACHCONDITIONS](http://coolgate.mote.org/beachconditions)

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[HTTP://WWW.WEATHER.GOV/TAMPA](http://www.weather.gov/tampa)

## **5 NWS Tide Report**

SOUS42 KCHS 091315  
TIDCHS  
SCZ045-050-052-092000-

CHARLESTON TIDE REPORT  
NATIONAL WEATHER SERVICE CHARLESTON SC  
915 AM EDT SAT JUL 9 2011

HERE ARE THE NEXT FOUR PREDICTED TIDES IN THE CHARLESTON HARBOR.  
THERE WILL BE A...HIGH TIDE AT 3:44 PM SAT FOLLOWED BY A...LOW TIDE AT  
10:02 PM SAT. THE NEXT HIGH TIDE WILL BE AT 3:45 AM SUN AND THE NEXT  
LOW TIDE WILL BE AT 10:08 AM SUN.

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PREDICTED TIDES ARE GIVEN IN MLLW.

TIDE:	SAT	3:44 PM	5.9 HIGH
	SAT	10:02 PM	0.3 LOW
	SUN	3:45 AM	5.0 HIGH
	SUN	10:08 AM	-0.4 LOW

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## **6 Great Lakes Water Level Report**

SXUS08 KDTX 281504  
OMRDTX

GREAT LAKES WATER LEVELS  
NATIONAL WEATHER SERVICE DETROIT/PONTIAC MI  
725 AM EDT FRI JUL 1 2011

THE FOLLOWING ARE THE MEAN LAKE LEVELS FORECAST OVER THE NEXT  
WEEK.

LAKE LEVEL...	INCHES FROM CHART DATUM
SUPERIOR	1
MICHIGAN AND HURON	9
ST CLAIR	30
ERIE	41
ONTARIO	44

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